

WHAT IS CLAIMED IS:

1. A method for managing asynchronous transfer mode (ATM) connections between a digital subscriber line add-drop multiplexer (DSLAM) and customer premises equipment, comprising:

5 establishing a plurality of ATM connections with customer premises equipment, the step of establishing each ATM connection comprising:

receiving a request for an ATM connection with unrecognized customer premises equipment at a DSLAM;

10 establishing the ATM connection between the DSLAM and the customer premises equipment;

associating the ATM connection with a status, the status comprising three possible states, the three possible states comprising an unverified state, a verified state, and an invalid state, wherein the verified state indicates that the connection is allowed full access to a network, the unverified state indicates that the connection is allowed conditional access to the network, and the invalid state indicates that the connection is not allowed to access the network; and

15 setting the status of the ATM connection to unverified;  
authenticating each of the ATM connections, the step of authenticating comprising:

20 authenticating the customer premises equipment associated with each connection;

if the unrecognized customer premises equipment is authenticated, setting the status of the connection to verified; and

25 if the unrecognized customer premises equipment is not authenticated, setting the status of the connection to invalid;

providing access to the network to each ATM connection according to the current status of the ATM connection;

receiving a packet from the network having an unrecognized destination;

identifying all of the ATM connections that have a status of verified;

30 generating a copy of the packet for each of the verified ATM connections; and

communicating one of the copies of the packet in the form of ATM cells to the customer premises equipment associated with each of the verified ATM connections.

2. A method for automatically configuring a digital subscriber line add-drop multiplexer (DSLAM), comprising:

receiving a request for a connection with unrecognized customer premises equipment at a DSLAM;

5 establishing the connection between the DSLAM and the customer premises equipment;

associating the connection with a status, the status comprising three possible states, the three possible states comprising an unverified state, a verified state, and an invalid state, wherein the verified state indicates that the connection is allowed full  
10 access to a network, the unverified state indicates that the connection is allowed conditional access to the network, and the invalid state indicates that the connection is not allowed to access the network;

setting the status of the connection to unverified;

authenticating the unrecognized customer premises equipment;

15 if the unrecognized customer premises equipment is authenticated, setting the status of the connection to verified;

if the unrecognized customer premises equipment is not authenticated, setting the status of the connection to invalid; and

20 providing access to the network according to the current status of the connection.

3. The method of Claim 2, wherein:

the connection between the DSLAM and the customer premises equipment comprises an asynchronous transfer mode (ATM) connection; and

25 information is communicated between the DSLAM and the unrecognized customer premises equipment in the form of ATM cells over DSL.

4. The method of Claim 2, wherein:  
the connection is one of a plurality of connections; and  
the method further comprises maintaining a connection table for all of the  
connections to the DSLAM, the connection table comprising:  
5 a connection identifier for each connection; and  
the associated status of each connection.
5. The method of Claim 4, further comprising:  
receiving a packet from the network having an unspecified destination;  
10 identifying all of the connections that are associated with a status of verified;  
generating one copy of the packet for each verified connection; and  
communicating one of the copies of the packet to the customer premises  
equipment associated with each of the verified connections.
- 15 6. The method of Claim 2, wherein providing access to the network  
comprises:  
buffering information received from the connection while the status of the  
connection is unverified;  
communicating the buffered information to the network if the status of the  
20 connection is set to verified; and  
discarding the buffered information if the status of the connection is set to  
invalid.

7. A digital subscriber line add-drop multiplexer (DSLAM), comprising:  
an interface operable to receive a request for a connection with unrecognized customer premises equipment and to establish the connection with the unrecognized customer premises equipment;
- 5 a memory operable to store a connection identifier and a status for the connection, the status comprising three possible states, the three possible states comprising an unverified state, a verified state, and an invalid state, wherein the verified state indicates that the connection is allowed full access to a network, the unverified state indicates that the connection is allowed conditional access to the
- 10 network, and the invalid state indicates that the connection is not allowed to access the network;
- a processor operable to:
- set the status of the connection as unverified when the connection is established;
- 15 authenticate the unrecognized customer premises equipment;
- set the status of the connection as verified if the customer premises equipment is authenticated;
- set the status of the connection as invalid if the customer premises equipment is not authenticated; and
- 20 provide access to the network according to the current status of the connection.
8. The DSLAM of Claim 7, wherein:
- the connection between the DSLAM and the customer premises equipment
- 25 comprises an asynchronous transfer mode (ATM) connection; and
- information is communicated between the DSLAM and the unrecognized customer premises equipment in the form of ATM cells over DSL.

9. The DSLAM of Claim 7, wherein:  
the connection is one of a plurality of connections; and  
the memory is further operable to store a connection table for all of the  
connections to the DSLAM, the connection table comprising:  
5 a connection identifier for each connection; and  
the associated status of each connection.

10. The DSLAM of Claim 9, wherein the processor is further operable to:  
receive a packet from the network having an unspecified destination;  
10 identify all of the connections that are associated with a status of verified;  
generate one copy of the packet for each verified connection; and  
communicate one of the copies of the packet to the customer premises  
equipment associated with each of the verified connections.

15 11. The DSLAM of Claim 7, wherein the processor is further operable to:  
buffer information received from the connection in the memory while the  
status of the connection is unverified;  
communicate the buffered information to the network if the status of the  
connection is set to verified; and  
20 discard the buffered information if the status of the connection is set to invalid.

12. Logic embodied in a computer-readable medium, operable to perform the steps of:

receiving a request for a connection with unrecognized customer premises equipment at a DSLAM;

5 establishing the connection between the DSLAM and the customer premises equipment;

associating the connection with a status, the status comprising three possible states, the three possible states comprising an unverified state, a verified state, and an invalid state, wherein the verified state indicates that the connection is allowed full  
10 access to a network, the unverified state indicates that the connection is allowed conditional access to the network, and the invalid state indicates that the connection is not allowed to access the network;

setting the status of the connection to unverified;

authenticating the unrecognized customer premises equipment;

15 if the unrecognized customer premises equipment is authenticated, setting the status of the connection to verified;

if the unrecognized customer premises equipment is not authenticated, setting the status of the connection to invalid; and

20 providing access to the network according to the current status of the connection.

13. The logic of Claim 12, wherein:

the connection is one of a plurality of connections; and

25 the logic is further operable to maintain a connection table for all of the connections to the DSLAM, the connection table comprising:

a connection identifier for each connection; and

the associated status of each connection.

14. The logic of Claim 13, wherein the logic is further operable to perform the steps of:

- receiving a packet from the network having an unspecified destination;
- identifying all of the connections that are associated with a status of verified;
- 5 generating one copy of the packet for each verified connection; and
- communicating one of the copies of the packet to the customer premises equipment associated with each of the verified connections.

15. The logic of Claim 12, wherein the logic is further operable to perform the steps of:

- buffering information received from the connection while the status of the connection is unverified;
- communicating the buffered information to the network if the status of the connection is set to verified; and
- 15 discarding the buffered information if the status of the connection is set to invalid.

16. A method for broadcasting information to a plurality of asynchronous transfer mode (ATM) connections between customer premises equipment and a digital subscriber add-drop multiplexer (DSLAM), comprising:

maintaining connection information for each of a plurality of ATM  
5 connections between a DSLAM and customer premises equipment, the connection  
information comprising a connection identifier and a status for the connection, the  
status comprising three possible states, the three possible states comprising an  
unverified state, a verified state, and an invalid state, wherein the verified state  
indicates that the connection is allowed full access to a network, the unverified state  
10 indicates that the connection is allowed conditional access to the network, and the  
invalid state indicates that the connection is not allowed to access the network;  
receiving a packet from the network having an unrecognized destination;  
identifying the ATM connections having a status of verified;  
generating one copy of the packet for each verified connection; and  
15 communicating one of the copies of the packet in the form of ATM cells to the  
customer premises equipment associated with each of the verified connections.

17. The method of Claim 16, further comprising:  
identifying the connections having a status of unverified;  
20 generating one copy of the packet for each of the unverified connections; and  
communicating one of the copies of the packet in the form of ATM cells to the  
customer premises equipment associated with each of the unverified connections.

18. The method of Claim 16, further comprising:  
25 identifying the connections having a status of unverified;  
generating one copy of the packet for each of the unverified connections;  
buffering the copy of the packet; and  
communicating one of the copies of the packet in the form of ATM cells to the  
customer premises equipment associated with each of the unverified connections.



19. A DSLAM, comprising:

means for maintaining connection information for each of a plurality of ATM connections between a DSLAM and customer premises equipment, the connection information comprising a connection identifier and a status for the connection, the status comprising three possible states, the three possible states comprising an  
5 unverified state, a verified state, and an invalid state, wherein the verified state indicates that the connection is allowed full access to a network, the unverified state indicates that the connection is allowed conditional access to the network, and the invalid state indicates that the connection is not allowed to access the network;

10 means for receiving a packet from the network having an unrecognized destination;

means for identifying the ATM connections having a status of verified;

means for generating one copy of the packet for each verified connection; and

15 means for communicating one of the copies of the packet in the form of ATM cells to the customer premises equipment associated with each of the verified connections.

20. The DSLAM of Claim 19, further comprising:

means for identifying the connections having a status of unverified;

20 means for generating one copy of the packet for each of the unverified connections; and

means for communicating one of the copies of the packet in the form of ATM cells to the customer premises equipment associated with each of the unverified connections.

21. The DSLAM of Claim 19, further comprising:
- means for identifying the connections having a status of unverified;
  - means for generating one copy of the packet for each of the unverified connections;
  - 5 means for buffering the copy of the packet; and
  - means for communicating one of the copies of the packet in the form of ATM cells to the customer premises equipment associated with each of the unverified connections.

22. Logic embodied in a computer-readable medium, operable to perform the steps of:

maintaining connection information for each of a plurality of ATM connections between a DSLAM and customer premises equipment, the connection  
5 information comprising a connection identifier and a status for the connection, the status comprising three possible states, the three possible states comprising an unverified state, a verified state, and an invalid state, wherein the verified state indicates that the connection is allowed full access to a network, the unverified state indicates that the connection is allowed conditional access to the network, and the  
10 invalid state indicates that the connection is not allowed to access the network;  
receiving a packet from the network having an unrecognized destination;  
identifying the ATM connections having a status of verified;  
generating one copy of the packet for each verified connection; and  
communicating one of the copies of the packet in the form of ATM cells to the  
15 customer premises equipment associated with each of the verified connections.

23. The logic of Claim 22, further operable to perform the steps of:  
identifying the connections having a status of unverified;  
generating one copy of the packet for each of the unverified connections; and  
20 communicating one of the copies of the packet in the form of ATM cells to the customer premises equipment associated with each of the unverified connections.

24. The logic of Claim 22, further operable to perform the steps of:  
identifying the connections having a status of unverified;  
25 generating one copy of the packet for each of the unverified connections;  
buffering the copy of the packet; and  
communicating one of the copies of the packet in the form of ATM cells to the customer premises equipment associated with each of the unverified connections.